Amendments to Claims

The listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. **(Currently amended)** A method for estimating carrier frequency offset in subscriber terminals in TD-SCDMA system, the method comprising:

A. determining number of effective base stations with same carrier frequency from which more than one signals are received by a subscriber terminal and main path positions of each signal;

B. combining the signals of each base station with same carrier frequency corresponding to the number of effective base stations with same carrier frequency based on the main path positions obtained in step A;

C. calculating a rough estimation value of the carrier frequency offset based on combined signal in step B[[.]];

wherein the determining number of effective base stations with same carrier frequency from which more than one signals are received by a subscriber terminal in step A comprises:

A1. calculating peak power value of each signal received by the subscriber terminal, and selecting the peak power values of predefined maximum number of base stations with same carrier frequency from higher to lower;

A2. determining the number of effective base stations with same carrier frequency from the signals determined in step A1 by the predefined maximum number of base stations with same carrier frequency are received by the subscriber terminal by comparing the ratio of the highest peak power value from the order in step A1 to the subsequent peak power values with a given threshold;

wherein step A2 further comprises :

A21. numbering the peak power values ordered from the highest to the lowest and setting a current sequence number as predefined number of the base stations with same carrier frequency ;

A22. determining whether the highest peak power value and a peak power value corresponding

to the current sequence number are greater than the given threshold, if so, setting the number of effective base stations with same carrier frequency from which the signals are received by a subscriber terminal as the value of the current sequence number, otherwise, the current sequence number decreases by one and returns back to step A22.

2. **(Cancelled)**

3. (Previously presented) A method as claimed in claim 2, wherein the signals are synchronous downlink pilot signals, and step A1 further comprises steps:

A11. shift multiple correlating a local synchronous downlink pilot code and a received synchronous downlink pilot signal resulting in a power value of the synchronous downlink pilot signals received by the subscriber terminal ;

A12. determining peak power values corresponding to each of the synchronous downlink pilot codes.

4. (Previously presented) A method as claimed in claim 3, wherein the method further comprises steps in between step A11 and step A12: selecting the power values of each frame of more than one frames and averaging the power values of each frame.

5. **(Cancelled)**

6. (Previously presented) A method as claimed in claim 1, further comprises, before step A, reading vector data of 128 chips while receiving synchronous downlink pilot signals at the beginning of a downlink pilot time slot.

7. (Previously presented) A method as claimed in claim 2, further comprises a step before step B: multi-path combining signals of each base station with same carrier frequency.

8. (Previously presented) A method as claimed in claim 7, wherein the step of multi-path combining signals of each base station with same carrier frequency comprises steps :

beginning from a point of previously predetermined number of the peak power value, reading data of synchronous downlink pilot signals at a point which is 2 times of a predefined value added length of the synchronous downlink pilot code;

performing Max Ratio Combination after eliminating phase difference between symbols of multi-path synchronous downlink pilot signal with different time delay and the phase difference of delay path.

9. (Previously presented) A method as claimed in claim 1, wherein step B of incorporating the signals of each base station with same carrier frequency corresponding to the number of base stations with same carrier frequency is: equal gain combining or weighted combining signals of each base station with same carrier frequency corresponding to the number of base stations with same carrier frequency to obtain an combined signal sequence.

10. (Previously presented) A method as claimed in claim 9, wherein step C is to obtain a rough estimating value of the carrier frequency offset according to the phase difference between two symbols spaced by a defined distant in the combined signal sequence.

11. (Previously presented) A method as claimed in claim 10, wherein step C further comprises: estimating carrier frequency offset for a predefined times, and then averaging them to get a carrier frequency offset estimation.

12. (Previously presented) A method as claimed in claim 10, wherein step C is to sum up the phase differences between two symbols spaced by a defined distant in the incorporated signal sequence, and then computing the phase angle to get the carrier frequency offset estimation.

13. **(Cancelled)**

14. **(Cancelled)**